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## NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

12/08/2009

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EXAMINER

CHEA, PHILIP J

ART UNIT

PAPER NUMBER

2453

DATE MAILED: 12/08/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,020	09/25/2003	Quan Vu	SONY-26000	9530

TITLE OF INVENTION: INFORMATION AND CONTENT EXCHANGE DOCUMENT TYPE DEFINITIONS TO SUPPORT CONTENT DISTRIBUTION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/08/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to:** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590                    12/08/2009

Jonathan O. Owens  
 HAVERSTOCK & OWENS LLP  
 162 North Wolfe Road  
 Sunnyvale, CA 94806

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

### **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,020	09/25/2003	Quan Vu	SONY-26000	9530

TITLE OF INVENTION: INFORMATION AND CONTENT EXCHANGE DOCUMENT TYPE DEFINITIONS TO SUPPORT CONTENT DISTRIBUTION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/08/2010
EXAMINER	ART UNIT	CLASS-SUBCLASS				
CHEA, PHILIP J	2453	709-230000				

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:

Issue Fee  
 Publication Fee (No small entity discount permitted)  
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4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

A check is enclosed.  
 Payment by credit card. Form PTO-2038 is attached.  
 The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/673,020	09/25/2003	Quan Vu	SONY-26000	9530
7590	12/08/2009		EXAMINER	
Jonathan O. Owens HAVERSTOCK & OWENS LLP 162 North Wolfe Road Sunnyvale, CA 94806				CHEA, PHILIP J
				ART UNIT PAPER NUMBER
				2453
DATE MAILED: 12/08/2009				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 504 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 504 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/673,020	VU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	PHILIP J. CHEA	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to amendment filed 9/18/09.
2.  The allowed claim(s) is/are 1,5-10,14-19,23-28,32-37,41-44,46 and 47.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 7/10/09; 9/30/09; 11/19/09
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

/Philip J Chea/  
Examiner, Art Unit 2453

Art Unit: 2453

#### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Owens on 11/19/09.

The application has been amended as follows:

#### **IN THE CLAIMS:**

Please see attached.

2. The following is an examiner's statement of reasons for allowance: The prior art does not teach nor render obvious each and every limitation of the claimed invention. Specifically the prior art does not teach document type definitions to manage data content exchange between the network device and one or more other network devices, an extension layer to provide document type definition extensions to the document type definitions defining a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure with a plurality of channels to store the data content wherein the data content is selectively offered and distributed, further wherein the plurality of channels include one or more sub-channels where the sub-channels provide more specific subject than then the subject-matter of the given channel and the metadata defines attributes associated with each channel and sub-channel including a title, a caption, an icon-url, an ice-element, and item-group-id.

The closest prior art Machida et al. (US 2002/0059624), discloses the general concept of hierarchical document type definitions and metadata, but does not disclose the specifics of the particular metadata that is present as claimed such as title, a caption, a icon-url, and ice-element and an item-group-id and organization in the document data structure as shown in Applicants Specification pages 11-13, TABLE 1 and TABLE 2.

Art Unit: 2453

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. CHEA whose telephone number is (571)272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Philip J Chea  
Examiner  
Art Unit 2453

/Philip J Chea/  
Examiner, Art Unit 2453  
11/20/09

Art Unit: 2453

1. (currently amended) A network device coupled to a network of devices, the network device comprising a hardware system configured to implement:
  - a. one or more applications;
  - b. a network layer coupled to interface with one or more other network devices;
  - c. a communications layer to provide a communications protocol including document type definitions to manage data content exchange between the network device and the one or more other network devices; and
  - d. an extension layer to provide document type definition extensions to the document type definitions, wherein the document type definition extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure, further wherein the hierarchical data content structure comprises a plurality of channels to store the data content, wherein the data content is selectively offered and distributed, wherein each channel within the plurality of channels includes one or more content sub-channels, each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes associated with the each channel within the plurality of channels and the content sub-channel of the one or more content sub-channels within the hierarchical data content structure, and further wherein the metadata associated with each channel of the plurality of channels includes a title, a caption, an icon-url, an ice-element and an item-group-id.
2. (canceled)
3. (canceled)
4. (canceled)
5. (currently amended) The network device of claim 3 1 wherein a first data content is associated with a first channel and a first content sub-channel within the first channel.
6. (previously presented) The network device of claim 5 wherein the first data content is associated with the first channel and the first content sub-channel according to a subject-matter of the first data content, specific subject-matter of the first channel and more specific subject-matter of the first content sub-channel.
7. (previously presented) The network device of claim 1 wherein the communications layer comprises an Information and Content Exchange protocol.
8. (original) The network device of claim 7 wherein the Information and Content Exchange protocol includes document type definitions and the document type definition extensions provide extensions to the document type definitions of the Information and Content Exchange protocol.
9. (original) The network device of claim 8 wherein the document type definition extensions are extensible markup language (XML)-based.
10. (currently amended) A method of providing data content between a first network device and one or more other network devices, the method comprising:
  - a. providing a communications protocol including document type definitions to manage data content exchange between the first network device and the one or more other network devices;
  - b. providing document type definition extensions to the document type definitions,

Art Unit: 2453

wherein the document type definition extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure;

c. configuring the hierarchical data content structure into a plurality of channels to store the data content, wherein the data content is selectively offered and distributed; and

d. transmitting the data content between the first network device and the one or more other network devices according to the communication protocol and the document type definition extensions to the communications protocol; and

e. configuring each channel within the plurality of channels into one or more content sub-channels, wherein each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes associated with the each channel within the plurality of channels and the content sub-channel of the one or more content sub-channels within the hierarchical data content structure and further wherein the metadata associated with each channel of the plurality of channels includes a title, a caption, an icon-url, an ice-element and an item-group-id.

11. (canceled)

12. (canceled)

13. (canceled)

14. (currently amended) The method of claim 12 10 further comprising associating a first data content with a first channel and a first content sub-channel within the first channel.

15. (previously presented) The method of claim 14 wherein the first data content is associated with the first channel and the first content sub-channel according to a subject-matter of the first data content, specific subject-matter of the first channel and more specific subject-matter of the first content sub-channel.

16. (previously presented) The method of claim 10 wherein the communications protocol comprises an Information and Content Exchange protocol.

17. (original) The method of claim 10 wherein the Information and Content Exchange protocol includes document type definitions and the document type definition extensions provide extensions to the document type definitions of the Information and Content Exchange protocol.

18. (original) The method of claim 17 wherein the document type definition extensions are extensible markup language (XML)-based.

19. (currently amended) An apparatus for providing data content between a first network device and one or more other network devices, the apparatus comprising a hardware system configured to implement:

a. means for providing a communications protocol including document type definitions to manage data content exchange between the first network device and the one or more other network devices;

Art Unit: 2453

b. means for providing document type definition extensions to the document type definitions, wherein the document type definition extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure;

c. means for configuring the hierarchical data content structure into a plurality of channels to store the data content, wherein the data content is selectively offered and distributed; and

d. means for transmitting the data content between the first network device and the one or more other network devices according to the communication protocol and the document type definition extensions to the communications protocol; and

e. means for configuring each channel within the plurality of channels into one or more content sub-channels, wherein each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes associated with the each channel within the plurality of channels and the content sub-channel of the one or more content sub-channels within the hierarchical data content structure and further wherein the metadata associated with each channel of the plurality of channels includes a title, a caption, an icon-url, an ice-element and an item-group-id.

20. (canceled)

21. (canceled)

22. (canceled)

23. (currently amended) The apparatus of claim 24 19 wherein the hardware system is further configured to implement means for associating a first data content with a first channel and a first content sub-channel within the first channel.

24. (previously presented) The apparatus of claim 23 wherein the first data content is associated with the first channel and the first content sub-channel according to a subject-matter of the first data content, specific subject-matter of the first channel and more specific subject-matter of the first content sub-channel.

25. (previously presented) The apparatus of claim 19 wherein the communications protocol comprises an Information and Content Exchange protocol.

26. (original) The apparatus of claim 19 wherein the Information and Content Exchange protocol includes document type definitions and the document type definition extensions provide extensions to the document type definitions of the Information and Content Exchange protocol.

27. (original) The apparatus of claim 26 wherein the document type definition extensions are extensible markup language (XML)-based.

28. (currently amended) A network comprising:

- a. one or more network devices; and
- b. a first network device coupled to the one or more other network devices, the first network device comprising:
  - i. one or more applications;
  - ii. a network layer coupled to interface with the one or more other network

Art Unit: 2453

devices;

iii. a communications layer to provide a communications protocol including document type definitions to manage data content exchange between the first network device and the one or more other network devices; and  
iv. an extension layer to provide document type definition extensions to the document type definitions, wherein the document type definition extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure, further wherein the hierarchical data content structure comprises a plurality of channels to store the data content, wherein the data content is selectively offered and distributed, each channel within the plurality of channels includes one or more content sub-channels, wherein each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes associated with the each channel within the plurality of channels and the content sub-channel of the one or more content sub-channels within the hierarchical data content structure and further wherein the metadata associated with each channel of the plurality of channels includes a title, a caption, an icon-url, an ice-element and an item-group-id.

29. (canceled)
30. (canceled)
31. (canceled)
32. (currently amended) The network of devices of claim 30 28 wherein a first data content is associated with a first channel and a first content sub-channel within the first channel.
33. (previously presented) The network of devices of claim 32 wherein the first data content is associated with the first channel and the first content sub-channel according to a subject-matter of the first data content, specific subject-matter of the first channel and more specific subject-matter of the first content sub-channel.
34. (previously presented) The network of devices of claim 28 wherein the communications layer comprises an Information and Content Exchange protocol.
35. (original) The network of devices of claim 28 wherein the Information and Content Exchange protocol includes document type definitions and the document type definition extensions provide extensions to the document type definitions of the Information and Content Exchange protocol.
36. (original) The network of devices of claim 35 wherein the document type definition extensions are extensible markup language (XML)-based.
37. (currently amended) A network device coupled to a network of devices, the network device comprising a hardware system configured to implement:
  - a. one or more applications;
  - b. a network layer coupled to interface with one or more other network devices;
  - c. an Information and Content Exchange protocol including document type definitions to manage data content exchange between the network device and the one or

Art Unit: 2453

more other network devices; and

d. extensions to the document type definitions, wherein document type definitions extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure, further wherein the hierarchical data content structure comprises a plurality of channels to store the data content, wherein the data content is selectively offered and distributed, each channel within the plurality of channels includes one or more content sub-channels, wherein each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes associated with the each channel within the plurality of channels and the content sub-channel of the one or more content sub-channels within the hierarchical data content structure, and further wherein the metadata associated with each channel of the plurality of channels includes a title, a caption, an icon-url, an ice-element and an item-group-id.

38. (canceled)
39. (canceled)
40. (canceled)
41. (currently amended) The network device of claim 39 37 wherein a first data content is associated with a first channel and a first content sub-channel within the first channel.
42. (previously presented) The network device of claim 41 wherein the first data content is associated with the first channel and the first content sub-channel according to a subject-matter of the first data content, specific subject-matter of the first channel and more specific subject-matter of the first content sub-channel.
43. (original) The network device of claim 37 wherein the document type definition extensions are extensible markup language (XML)-based.
44. (currently amended) A network device coupled to a network of devices, the network device comprising a hardware system configured to implement:
  - a. one or more applications;
  - b. a network layer coupled to interface with one or more other network devices;
  - c. a communications layer to provide a communications protocol including document type definitions to manage data content exchange between the network device and the one or more other network devices; and
  - d. an extension layer to provide document type definition extensions to the document type definitions, wherein the document type definition extensions define a hierarchical data content structure for data content and metadata corresponding to the hierarchical data content structure, further wherein the hierarchical data content structure comprises a plurality of channels to store the data content, wherein the data content is selectively offered and distributed, wherein each channel within the plurality of channels includes one or more content sub-channels, wherein each channel within the plurality of channels provides data content of a related subject-matter and each content sub-channel of the one or more content sub-channels within a given channel segments the data content within the given channel according to more specific subject-matter than subject-matter of the given channel, wherein the metadata defines attributes of each of the plurality of channels, each of the sub-channels and each of the data content and further wherein the metadata associated with each channel of the plurality of channels includes

Art Unit: 2453

a title, a caption, an icon-url, an ice-element and an item-group-id.

45. (canceled)
46. (previously presented) The network device of claim 44 wherein the metadata associated with each content sub-channel includes a title, a caption, a priority, an icon-url, an ice-element and an item-group-id.
47. (previously presented) The network device of claim 44 wherein the metadata associated with each data content includes a url, a size, an ice-element and an item-id.